User's Manual

Code Reader 1.1

High-Density and
Ultra High Density Imager

This manual is applicable for firmware versions 1200 and higher.

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Statement of Agency Compliance

The Code Reader 1.1 has been tested for compliance with FCC regulations and was found to be compliant with all applicable FCC Rules and Regulations.

The Code Reader 1.1 has been tested for compliance to CE standards and guidelines and was found to conform to applicable CE standards, specifically the EMC requirements EN 55024, ESD EN 61000-4-2, Radiated RF Immunity EN 61000-4-3, ENV 50204, EFT EN 61000-4-4, Conducted RF Immunity EN 61000-4-6, EN 55022, Class B Radiated Emissions, and Class B Conducted Emissions.

The Code Reader 1.1 can be set to use targeting lasers. If the targeting lasers are activated, do not stare into the beams. The Code Reader's targeting lasers have been rated as Class 2 Lasers by ANSI 2136.1-1993.

The Code Reader 1.1 has been tested by an independent electromagnetic compatibility laboratory in accordance with the applicable specifications and instructions.

Code Corporation - Overview

The Code Corporation designs, develops and manufactures data capture and automatic identification technologies. The company specializes in image-based readers and advanced data collection platforms.

The company is a leading developer and manufacturer of linear and two-dimensional code readers. By utilizing new imaging technology, the Code Corporation has developed readers that out perform comparable readers, but are less expensive. Code Readers feature simple, omni-directional targeting and are ideal for professional and light-industrial uses.

The Code Corporation also has developed a unique data colloection platform called CodeXML™. CodeXML consists of innovative software products that allow businesses to easily migrate to more progressive and flexible data collection applications. The CodeXML platform allows businesses to bring online new systems while keeping legacy applications unchanged. By developing easy to use data definition software, and intelligent data routing software, the Code Corporation improves implementation, maintenance, and eliminates problematic upgrades for all automatic identification applications including 2-D codes, linear bar codes, RFID and OCR data. The CodeXML platform consists of the following two software products:

Code Router Software

Code Router software was developed to simplify the acquisition, routing and management of various data formats. The software recognizes and converts various data element formats, and is capable of routing multiple data strings to web-based or local applications. Code Router software is compatible with Windows, and Windows CE platforms and works with RS232, PCMCIA Card and Keyboard Wedge devices.

CodeXML Maker Software

CodeXML Maker Pro software is designed for the professional seeking to integrate high density, two-dimensional bar codes into applications. CodeXML Maker Pro features an easy user interface with drag and drop functionality. Users can easily manipulate size, resolution, bleed correction, error correction, and file format. CodeXML Maker Pro also allows users to create private or public codes and features innovative reader authentication features that simplifies setting up a network of readers.

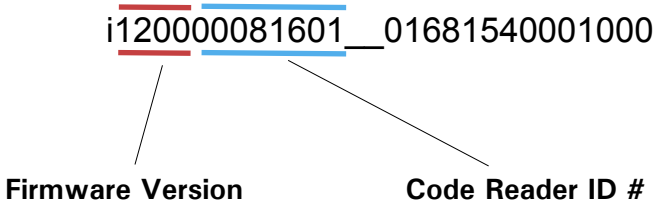
Code Reader 1.1 - Overview

The low-cost Code Reader 1.1 (figure 1.1) is an innovative, hand-held data capture device for reading and decoding high density two-dimensional (2-D) codes and linear bar codes.

By utilizing new imaging technology, the Code Corporation has developed readers that outperform comparable reader and are less expensive. The Code Reader 1.1 is available in a Ultra High Density (UHD) version for smaller very dense codes and a High Density (HD) version for larger codes.

This manual is applicable for firmware versions 12.0 and higher. To find out what firmware your Reader has, open a text editor program (i.e. Notepad, Microsoft Word...) and read the following code:

You will get a text string with your firmware version and Code Reader ID number (see below):



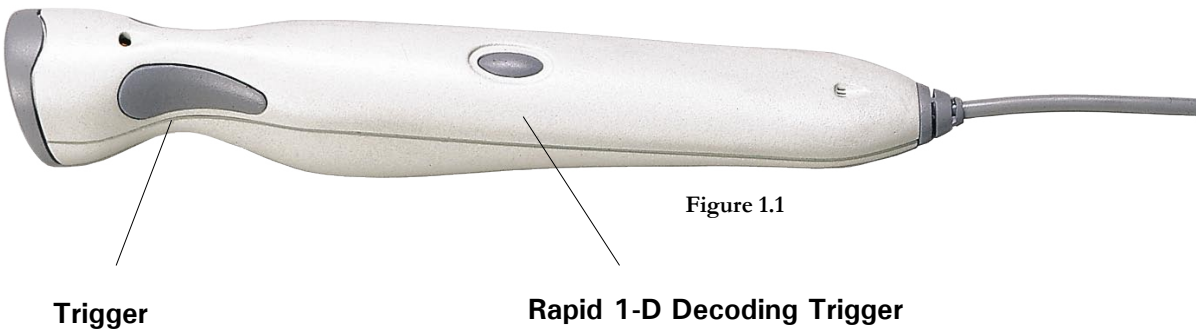


Figure 1.1

Targeting and Reading Techniques

1. Hold Code Reader about 2 - 4 inches above the code.

2. Hold the Code Reader still - **DO NOT SWIPE OR MOVE THE READER.**

3. Press and hold one of triggers found on either side of the neck of the Code Reader (see figure 1.2 below). For rapid 1-D reading press and hold trigger in the middle of the reader (see figure 1.3 below).

4. When the code has been read and decoded, the reader will beep and the LED lights in the Code Reader's head will falsh on and off.

Figure 1.2

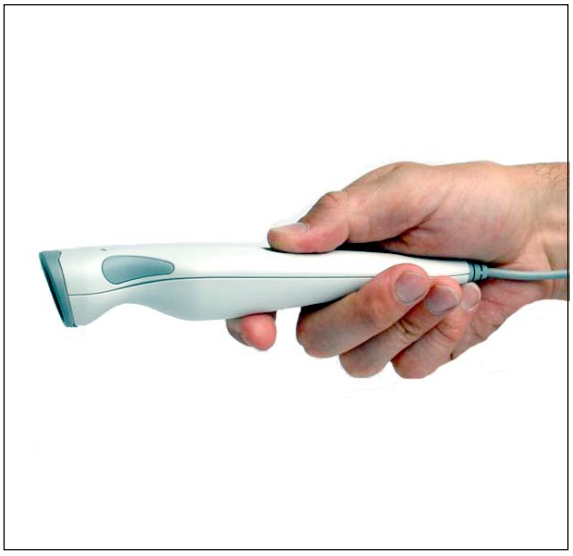


Figure 1.3

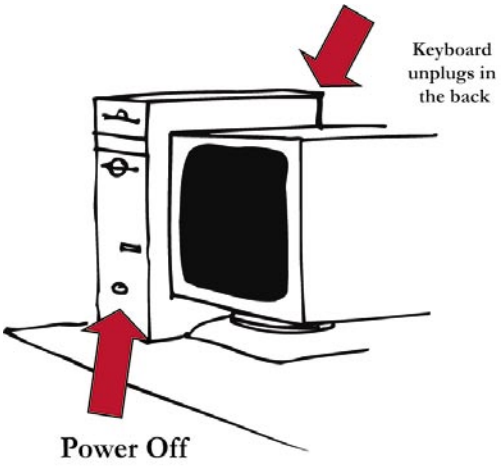
Chapter 2

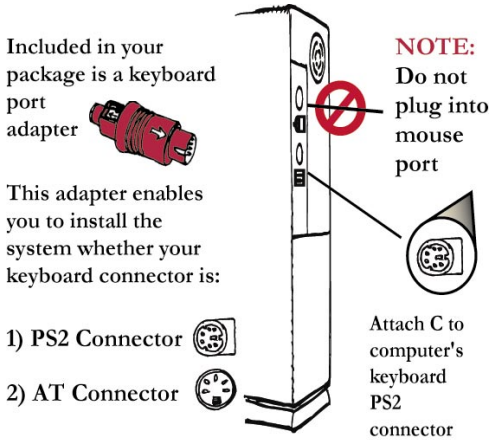
Code Reader 1.1 with Keyboard Wedge Interface

Installation Instructions for Keyboard Wedge

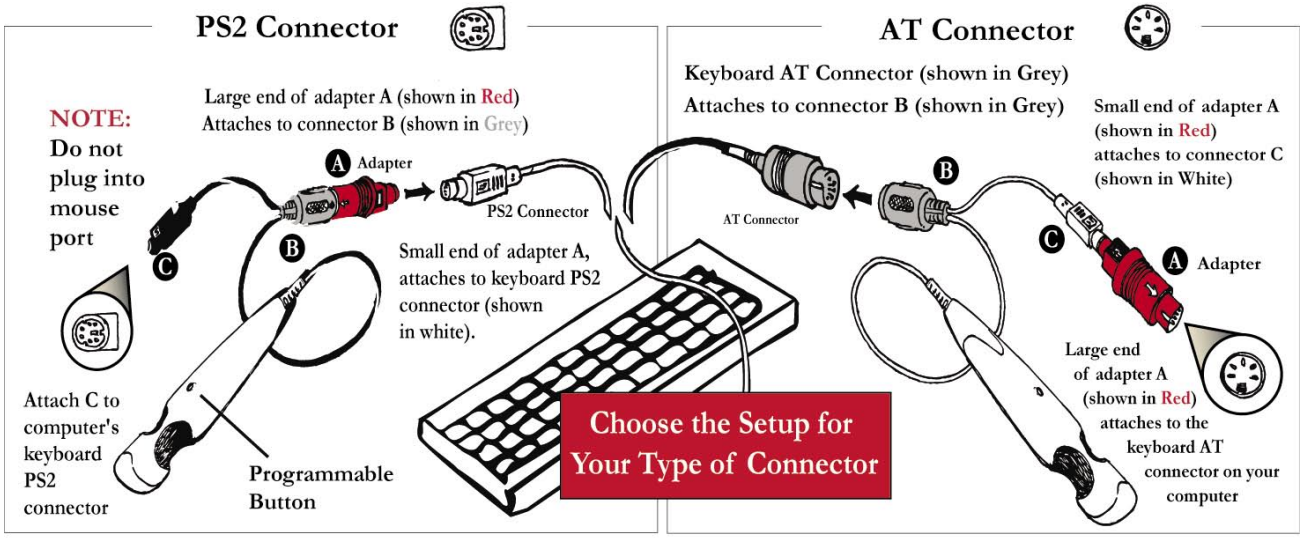
Ensure the power is off and unplug your keyboard.

Simply follow the keyboard cord to where it plugs into the computer, and unplug it. Note the location, because you will be plugging it back in momentarily.




Included in your package is a keyboard port adapter
This adapter enables you to install the system whether your keyboard connector is:
1) PS2 Connector
2) AT Connector
NOTE: Do not plug into mouse port
Attach C to computer's keyboard PS2 connector

Note: For laptop computers, you must have an external keyboard port (normally PS2 connector). Included with your Code Reader is an adapter that can be configured for use with a PS2 or an AT keyboard connector.


PS2 Connector
NOTE: Do not plug into mouse port
Large end of adapter A (shown in Red) Attaches to connector B (shown in Grey)
A Adapter
PS2 Connector
B
C
Small end of adapter A, attaches to keyboard PS2 connector (shown in white).
Attach C to computer's keyboard PS2 connector
Programmable Button
Choose the Setup for Your Type of Connector
AT Connector
Keyboard AT Connector (shown in Grey) Attaches to connector B (shown in Grey)
Small end of adapter A (shown in Red) attaches to connector C (shown in White)
A Adapter
Large end of adapter A (shown in Red) attaches to the keyboard AT connector on your computer

Factory Default Settings for Keyboard Wedge

The following are the factory default settings for Code Reader 1.1 High Density (HD) and Code Reader 1.1 Ultra High Density (UHD) models with firmware versions 12.0 and higher.

High Density (HD) Model & Ultra High Density (UHD) Models

Circle Laser	OFF
Dot Laser	ON
1-D Codes Enabled	Code 39, Code 128, UPC, EAN, JAN
2-D Codes Enabled	DataMatrix, GoCode, PDF 417, Micro PDF 417, QR Code
Negative 2-D Code Reading	ON
Rectangle Data Matrix Code Reading	ON
Prefix	None
Suffix	None
Language	English

Keyboard Wedge Reader Configuration

Your Code Reader has been properly configured before shipping and may not need to be reconfigured. If you wish to switch configuration to a keyboard wedge interface please scan the following code:

Configure your Code Reader for a keyboard port:

Configure your Code Reader for a English language keyboard:

Configure your Code Reader for a German language keyboard:

Configure your Code Reader for a French language keyboard:

Programming a Prefix or Suffix

Read the following codes to add the corresponding prefix or suffix:

Prefix

Comma

Space

Suffix

Comma

Space

Tab

Enter

Read the Prefix None or Suffix None codes to turn the prefix and suffix commands off.

Prefix

None

Suffix

None

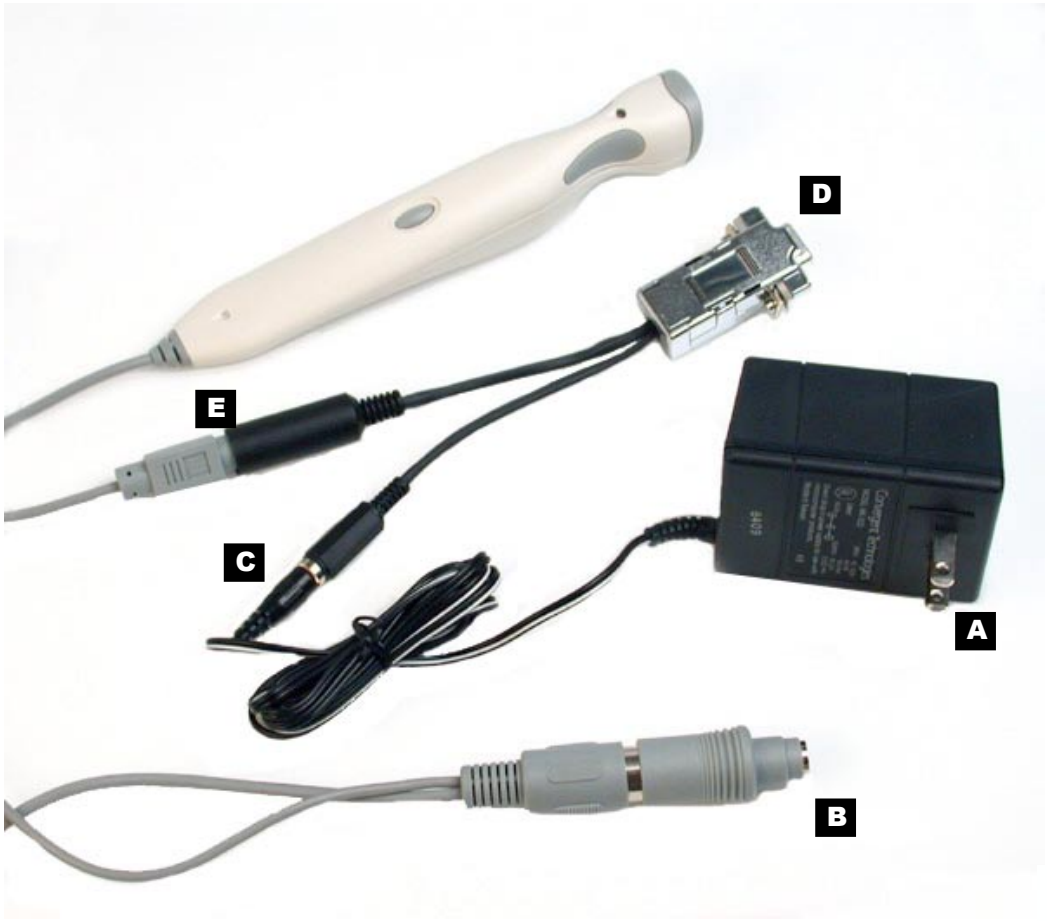
To save the settings on your Code Reader please read the save settings code on page 28.

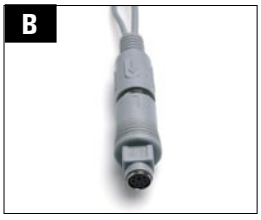
To create a custom prefix or suffix you may purchase a copy of CodeXML Maker Pro software. Call (801) 495-2200 or visit www.codecorp.com for more details.

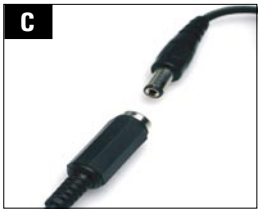
Chapter 3

Code Reader 1.1 with Serial Port Interface

Installation Instructions for a Serial Port Adapter







Please read the following before setting up your Code Reader 1.1 with serial port adapter.

A. Plug the 120 Volt AC adapter into the wall socket.

B. DO NOT PLUG IN large end of Code Reader 1.1 (only used for keyboard ports).

C. Plug the small end of the serial port adpater into the 120 AC Volt adapter.

D. Plug the serial port connection to the serial port in the back of your computer.

E. Plug the large end of the serial port adapter into the Code Reader 1.1 PS2 plug.

Serial Port Interface - Default Settings

The following are the factory default settings for Code Reader 1.1 High Density (HD) and Code Reader 1.1 Ultra High Density (UHD) models with firmware versions 12.0 and higher.

High Density (HD) Model & Ultra High Density (UHD) Models

Circle Laser	OFF
Dot Laser	ON
1-D Codes Enabled	Code 39, Code 128, UPC, EAN, JAN)
2-D Codes Enabled	DataMatrix, GoCode, PDF 417, Micro PDF 417, QR Code
Negative 2-D Codes	ON
Rectangle Data Matrix Codes	ON
Prefix	None
Suffix	None
Baud Rate	38,400
Word Length	8 Bit
Stop Bit	1 Stop Bit

Serial Port Configuration

Your Code Reader has been properly configured before shipping and may not need to be reconfigured. If you wish to switch configuration to a serial port interface please scan the following code:

Configure your Code Reader for a serial port:

To save the settings on your Code Reader please read the save settings code on page 28.

Programming a Prefix or Suffix

Read the following codes to add the corresponding prefix or suffix:

Prefix

Tab

Comma

Space

Suffix

Tab

Comma

Space

Carriage Return

Line Feed

Carriage Return Line Feed

Read the Prefix None or Suffix None codes to turn the prefix and suffix commands off.

Prefix

None

Suffix

None

To save the settings on your Code Reader please read the save settings code on page 28.

Set Word Length and Stop Bit Data

For advanced users only - Scan one of the following codes to set the word/character length.

7 bit:

8 bit:

For advanced users only - Scan one of the following codes to set stop bit data.

1 stop bit:

1.5 stop bits:

2 stop bits:

To save the settings on your Code Reader please read the save settings code on page 28.

Programming the Baud Rate

Scanning the following codes will set the baud rate for your Code Reader. The baud rate is the information transfer rate of data being passed between your Code Reader and your computer.

1200:

2400:

4800:

9600:

19200:

38400:

57600:

To save the settings on your Code Reader please read the save settings code on page 28.

Chapter 4

Code Reader 1.1 with PCMCIA Card Interface

Installation Instructions for PCMCIA Card Adapter

1. You will need to download software from the Code Corporation website. Installation instructions are available on the webpage. You will be asked for a user name and password, which was included in the packaging when you received your Code Reader.

   To download a version of Code Driver for CE devices visit:

   http://www.codecorp.com/support/CE/driver

2. Once you have downloaded the appropriate software on your CE device, insert the PCMCIA Card into expansion slot.

3. Turn the PDA on.

4. Select appropriate software from Start menu and open program.

5. Code Reader should be ready to read.

PCMCIA Card Interface - Default Settings

The following are the factory default settings for Code Reader 1.1 High Density (HD) and Code Reader 1.1 Ultra High Density (UHD) models with firmware versions 12.0 and higher.

High Density (HD) Model & Ultra High Density (UHD) Models

Circle Laser	OFF
Dot Laser	ON
1-D Codes Enabled	Code 39, Code 128, UPC, EAN, JAN)
2-D Codes Enabled	DataMatrix, GoCode, PDF 417, Micro PDF 417, QR Code
Negative 2-D Codes	ON
Rectangle Data Matrix Codes	ON
Prefix	None
Suffix	None
Baud Rate	9,600
Word Length	8 Bit
Stop Bit	1 Stop Bit

PCMCIA Card Configuration

Your Code Reader has been properly configured before shipping and may not need to be reconfigured. If you wish to switch configuration to a PCMCIA Card interface please scan the following code:

Configure your Code Reader for a serial CE settings:

To save the settings on your Code Reader please read the save settings code on page 28.

Programming a Prefix or Suffix

Read the following codes to add the corresponding prefix or suffix:

Prefix

Tab

Comma

Space

Suffix

Tab

Comma

Space

Carriage Return

Line Feed

Carriage Return Line Feed

Read the Prefix None or Suffix None codes to turn the prefix and suffix commands off.

Prefix

None

Suffix

None

To save the settings on your Code Reader please read the save settings code on page 28.

Chapter 5

Setting Targeting and Symbology Settings

Programming: Symbology Settings

Data Matrix

Data Matrix enabled:

Negative Data Matrix enabled:

Negative Data Matrix disabled:

Rectangle-shaped Data Matrix enabled:

Rectangle-shaped Data Matrix disabled:

GoCode

GoCode enabled:

GoCode disabled:

QR Code

QR code enabled:

QR code disabled:

To save the settings on your Code Reader please read the save settings code on page 28.

Setting multible symbologies will affect the performance of the Code Reader

Programming: Symbology Settings (con't)

PDF 417

PDF417 enabled:

PDF417 disabled:

Micro PDF 417

Micro PDF417 enabled:

Micro PDF417 disabled:

1-D Codes - Code 39, Code 128, UPC, EAN, JAN

1-D codes enabled:

1-D codes disabled:

To save the settings on your Code Reader please read the save settings code on page 28.

Setting multible symbologies will affect the performance of the Code Reader

Set Reader Controls

Enable targeting dot laser:

Disable targeting dot laser:

Enable targeting circle laser:

Disable targeting circle laser:

Enable continous scanning

Disable continous scanning

Enable reader sound:

Disable reader sound:

Save Settings on Reader:

Reset to Factory Defaults

To save the settings on your Code Reader please read the save settings code on page 28.

Chapter 6

Code Reader Specifications

Code Reader 1.1 HD - Specifications

Performance

The Code Reader 1.1 - HD is for reading and decoding 2-D codes with elements as small as .007 inches (.178 mm) and linear bar codes ranging in width from .5 inches to 1.5 inches.

Working Range (Typical)

Size:	5.0 pt font GoCode (10 Characters)	7 mil DataMatrix (10 Characters)	4.2 mil Code 128 (14 Characters)
Near:	0.93 inches (23.62 mm)	1.15 inches (29.21 mm)	0.78 inches (19.81 mm)
Far:	1.97 inches (50.04 mm)	1.63 inches (41.40 mm)	2.08 inches (52.83 mm)
Size:	5.8 pt font GoCode (10 Characters)	9 mil DataMatrix (10 Characters)	5.8 mil Code 128 (22 Characters)
Near:	0.71 inches (18.03 mm)	0.74 inches (18.80 mm)	1.50 inches (38.10 mm)
Far:	2.2 inches (55.88 mm)	2.00 inches (50.80 mm)	2.50 inches (63.50 mm)
Size:	11.5 pt font GoCode (10 Characters)	13 mil DataMatrix (10 Characters)	7.5 mil Code 128 (23 Characters)
Near:	0.55 inches (13.97 mm)	0.46 inches (11.68 mm)	1.84 inches (46.74 mm)
Far:	3.42 inches (86.87 mm)	2.45 inches (62.23 mm)	2.83 inches (71.88 mm)

Rotational Sensitivity:	360 °
Viewing Angle:	+/- 45 °
Ambient Light:	Total darkness to 100,000 lux (full sunlight)
Aiming:	Circle or dot pattern provides user feedback
2-Dimensional Symbologies:	DataMatrix, GoCode
Linear Bar Codes:	Code 39, Code 128, UPC, EAN, JAN
Interface:	RS232, Keyboard Wedge, PC Card
Programmable Options:	Baud Rate, Parity, Data Formatting, Code Options, codeXML™

Mechanical Dimensions

Length:	7.2 inches (18.28 cm)
Diameter:	1.15 inches (2.92 cm)
Weight Without Cord:	1.8 oz. (51g)
Weight With Cord:	5.18 oz. (147g)

Environmental

Operating Temperature:	0 ° C to 40 ° C
Storage Temperature:	- 40 ° C to 70 ° C
Shock:	10 drops from 3 ft. to concrete at room temperature
ESD:	Functional after 10KV discharge
Agency:	FCC Class B, CE
Warranty:	1 year full replacement

CR001R1 8/02 - Specifications subject to change without notice.

Code Reader 1.1 UHD - Specifications

Performance

The low-cost Code Reader 1.1 - UHD is for reading and decoding 2-D codes with elements as small as .004 inches (.10 mm) and linear bar codes ranging in width from .5 inch to 1 inch.

Working Range (Typical)

Size:	5.0 pt font GoCode (10 Characters)	7 mil DataMatrix (10 Characters)	4.2 mil Code 128 (14 Characters)
Near:	0.25 inches (6.35 mm)	.40 inches (10.16 mm)	0.40 inches (10.16 mm)
Far:	1.40 inches (35.36 mm)	1.28 inches (32.51 mm)	1.27 inches (32.26 mm)
Size:	5.8 pt font GoCode (10 Characters)	9 mil DataMatrix (10 Characters)	5.8 mil Code 128 (14 Characters)
Near:	0.25 inches (6.35 mm)	0.25 inches (6.35 mm)	0.48 inches (12.19 mm)
Far:	1.46 inches (37.08 mm)	1.53 inches (38.86 mm)	1.59 inches (40.39 mm)
Size:	11.5 pt font GoCode (10 Characters)	13 mil DataMatrix (10 Characters)	7.5 mil Code 128 (14 Characters)
Near:	0.63 inches (16.00 mm)	0.24 inches (6.10 mm)	1.28 inches (32.51 mm)
Far:	2.3 inches (58.42 mm)	1.60 inches (40.64 mm)	1.75 inches (44.45 mm)

Rotational Sensitivity:	360 °
Viewing Angle:	+/- 45 °
Ambient Light:	Total darkness to 100,000 lux (full sunlight)
Aiming:	Circle or dot pattern provides user feedback
2-Dimensional Symbologies:	DataMatrix, GoCode
Linear Bar Codes:	Code 39, Code 128, UPC, EAN, JAN
Interface:	RS232, Keyboard Wedge, PC Card
Programmable Options:	Baud Rate, Parity, Data Formatting, Code Options, codeXML™

Mechanical Dimensions

Length:	7.2 inches (18.28 cm)
Diameter:	1.15 inches (2.92 cm)
Weight Without Cord:	1.8 oz. (51g)
Weight With Cord:	5.18 oz. (147g)

Environmental

Operating Temperature:	0 ° C to 40 ° C
Storage Temperature:	- 40 ° C to 70 ° C
Shock:	10 drops from 3 ft. to concrete at room temperature
ESD:	Functional after 10KV discharge
Agency:	FCC Class B, CE
Warranty:	1 year full replacement

CR001R1 8/02 - Specifications subject to change without notice.

Chapter 7

Maintenance and Troubleshooting

Maintenance and Troubleshooting

Note: The Code Reader 1.1 was designed for use in a light industrial or office setting. Exposing the Reader to harsh temperatures or environments may cause the Code Reader to malfunction.

Maintenance

The Code Reader 1.1 device operates efficiently and reliably and needs only a minimum of maintenance to operate. A few tips are given below for maintenance suggestions.

Cleaning the Code Reader's Window

The Code Reader's window should be clean to allow the best performance of the device. The window is the clear plastic piece inside the head of the Reader. Do not touch the window. Your Code Reader uses CMOS technology that is much like a digital camera. A dirty window may stop the Code Reader from reading codes.

If the window becomes dirty, clean it with a soft, non-abrasive cloth or a facial tissue that has been moistened with water. A mild detergent may be used to clean the window, but the window should be wiped with a water moistened cloth or tissue after using the detergent.

The Code Reader's housing may be cleaned in the same way.

Maintenance and Troubleshooting (con't)

Your Code Reader will perform a self-test every time it is powered up. You should see the light on the Code Reader flash once when it is connected to a computer or hand held device that has been powered up. If your Code Reader does not perform as described, please review the following troubleshooting tips:

Power - The Code Reader does not have power, the light on the top of the Code Reader does not flash when connected to a device, or the LED lights in the Code Reader's head do not illuminate when the Code Reader's scan buttons are pressed. Make sure that:

1. The Code Reader's cable is securely connected to the computer or hand-held device.
2. The host system is powered on.

Decoding - The Code Reader has problems reading codes. Make sure that:

1. The codes you are scanning aren't smudged, smeared, or partially covered.
2. The codes you are scanning aren't larger than the maximum size the Code Reader can read - they must fit in the Code Reader's field of view.
3. You are holding the Code Reader at least 2-4 inches above the code.
4. You try to hold the Code Reader at different angles to read codes printed on glossy paper.
5. The type of codes you are scanning are enabled to be read by the Code Reader.
6. The Code Reader's window is clean.

Keyboard - Your Code Reader does not detect your keyboard or keyboard is attached, but typing is ignored. The Keyboard Num-lock, Cap-lock, and Scroll-lock indicator LEDs blink every two seconds. Read the appropriate code from those below.

keyboard never present (for laptops)

keyboard always present (for desktops)

Auto-detect keyboard presence (default)

To save the settings on your Code Reader please read the save settings code on page 28.

Code Corporation Customer Service and Support

Code Reader Questions or Problems

If you experience problems with your Code Reader or have questions about to use Code Corporation products, please visit www.codecorp.com/support for tips on how to use and troubleshoot your Code Reader and software. If you are unable to resolve the problem on your own, call Code Corporation Technical Support at 801-495-2200 for support Monday through Friday, 8:30 a.m. to 5:00 p.m. MST.

Code Reader 1.1 Warranty

Your Code Reader 1.1 comes with a full one-year warranty. If your Code Reader malfunctions, please visit our website at www.codecorp.com/support and read through the Code Reader troubleshooting guide before calling Code Corporation Technical Support. If you are unable to resolve your problem, call Code Corporation Technical Support at 801-495-2200 for support Monday through Friday, 8:30 a.m. to 5:00 p.m. MST. We will assist you with technical problems or replace the Code Reader at our option.